NAME _____ DATE _____ PERIOD ____

7-5 Skills Practice

7-6 Roots and Zeros

Solve each equation. State the number and type of roots.

1. $5x + 12 = 0$

2. $x^2 - 4x + 40 = 0$

3. $x^5 + 4x^3 = 0$

4. $x^4 + 625 = 0$

5. $4x^2 - 4x - 1 = 0$

6. $x^5 - 81x = 0$

Find all of the zeros of each function. List p + q.

21. $f(x) = x^3 + 5x^2 + 11x + 15$

22. $q(x) = x^3 - 10x^2 + 18x - 4$

23. $m(x) = 6x^4 - 17x^3 + 8x^2 + 8x - 3$

24. $g(x) = x^4 + 4x^3 + 5x^2 + 4x + 4$

Find all of the zeros of each function. List p + q.

21. $f(x) = 2x^4 + 7x^3 - 2x^2 - 19x - 12$

22. $q(x) = x^4 - 4x^3 + x^2 + 16x - 20$

23. $h(x) = x^6 - 8x^3$

24. $g(x) = x^6 - 1$

Write a polynomial function of least degree with integral coefficients that has the given zeros.

19. $-3, -5, 1$

20. $3i$

21. $-5 + i$

22. $-1, \sqrt{3}, -\sqrt{3}$

23. $i, 5i$

24. $-1, 1, i\sqrt{6}$